PERFORMANCE AUDIT

OF

COMPUTER EQUIPMENT SURPLUS AND SALVAGE

DEPARTMENT OF INFORMATION TECHNOLOGY AND
DEPARTMENT OF MANAGEMENT AND BUDGET

November 2004

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Michigan
Office of the Auditor General
REPORT SUMMARY

Performance Audit

Computer Equipment Surplus and Salvage

Department of Information Technology (DIT)
Department of Management and Budget (DMB)

Report Number:
50-515-04

Released:
November 2004

Network and desktop computer equipment is used by State employees to process and store data for State of Michigan operations. Network and desktop computer equipment that is no longer needed is disposed of through the surplus and salvage process. DIT processes the disposal of computer equipment for executive branch departments. The disposed of computer equipment may be reused by another executive branch department or sold at a State surplus auction. DMB manages the State Surplus Property Program.

Audit Objective:
To assess the effectiveness of DIT and DMB controls in preventing unauthorized disclosure of data on surplus and salvage computer equipment.

Audit Conclusion:
DIT and DMB controls were not reasonably effective in preventing unauthorized disclosure of data on surplus and salvage computer equipment.

Material Condition:
DIT had not established effective controls to ensure the removal or destruction of confidential and sensitive State data on surplus and salvage computer equipment. Without effective controls to remove or destroy data, it is possible that confidential and sensitive data could be retrieved by unauthorized agency personnel or by individuals that purchase computers at State surplus auctions. (Finding 1)

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Audit Objective:
To assess the effectiveness of DIT and DMB controls in preventing unauthorized removal or theft of surplus and salvage computer equipment.

Audit Conclusion:
DIT and DMB controls were somewhat effective in preventing unauthorized removal or theft of surplus and salvage computer equipment.

Reportable Condition:
DIT did not implement comprehensive tracking controls over surplus and salvage computer equipment and hard drives to monitor the movement and location of surplus and salvage computers. As a result, DIT cannot completely account for and control surplus and salvage computer equipment and hard drives. (Finding 2)

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Agency Response:
Our report contains 2 findings and 2 corresponding recommendations. The agency preliminary responses indicated that DIT agreed with the findings and has partially complied or will comply with the recommendations.

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THOMAS H. MCTAVISH, C.P.A.
AUDITOR GENERAL

November 23, 2004

Ms. Teresa M. Takai, Director
Department of Information Technology
Landmark Building
Lansing, Michigan
and
Mr. Mitch Irwin, Director
Department of Management and Budget
Lewis Cass Building
Lansing, Michigan

Dear Ms. Takai and Mr. Irwin:

This is our report on the performance audit of Computer Equipment Surplus and Salvage, Department of Information Technology and Department of Management and Budget.

This report contains our report summary; description of agency; audit objectives, scope, and methodology and agency responses; comments, findings, recommendations, and agency preliminary responses; and a glossary of acronyms and terms.

Our comments, findings, and recommendations are organized by audit objective. The agency preliminary responses were taken from the Department of Information Technology's responses subsequent to our audit fieldwork. The *Michigan Compiled Laws* and administrative procedures require that the audited agency develop a formal response within 60 days after release of the audit report.

We appreciate the courtesy and cooperation extended to us during this audit.

Sincerely,

Thomas H. McTavish, C.P.A.
Auditor General

50-515-04

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INTRODUCTION

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GLOSSARY

50-515-04

Network computer equipment* and desktop computer equipment* are used by State employees to process and store data for State of Michigan operations. Network and desktop computer equipment that is no longer needed is disposed of through the surplus* and salvage* process. The Department of Information Technology (DIT) processes the disposal of computer equipment* for executive branch departments. The disposed of computer equipment may be reused by another executive branch department or sold at a State surplus auction. The Department of Management and Budget (DMB) manages the State Surplus Property Program.

The agencies responsible for surplus and salvage of computer equipment are:

a. <u>DIT Depot Maintenance and Logistics</u>
    DIT Depot Maintenance and Logistics coordinates the surplus and salvage process of all desktop computer equipment. Depot Maintenance and Logistics provides services for all executive branch departments supported by DIT for desktop computer equipment, including workstation components, laptops, printers, palm pilots, overhead projectors, and cameras. Depot Maintenance and Logistics' services also include asset management of desktop computer equipment, repair and maintenance of all desktop computer equipment no longer under the original factory warranty, procurement of new desktop computer equipment, preparation and transfer of desktop computer equipment that the State no longer supports to DMB for sale or disposal, and salvage of computer equipment that is reusable by other State agencies. The DIT salvage warehouse* acts as a service center for the receipt and transfer of salvage desktop computer equipment from one agency to another agency.

b. <u>DIT Field Services</u>
    DIT Field Services provides Statewide desktop customer service as well as hardware and software support. Its responsibilities include, but are not limited to, installation of all desktop computer workstations, relocation of desktop computer

* *See glossary at end of report for definition.*

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equipment; repair of desktop workstations; printer support; preventative maintenance for desktop computer equipment; and preparation and organization of agency surplus and salvage desktop computer equipment.

c. <u>DIT Technical Services</u>

During our audit, DIT reorganized several of its divisions. On March 29, 2004, DIT Distributed Processing Operations became DIT Technical Services. Technical Services is responsible for administering server operations. Technical Services also manages the request, approval, and processing of surplus and salvage network computer equipment, including servers, uninterruptable power supplies, server keyboards and monitors, switches, hubs, routers, and tape libraries. During our audit period, Distributed Processing Operations was also responsible for supporting network computer equipment and coordinating the surplus and salvage of network computer equipment.

d. <u>DMB Logistics Division</u>

DMB's State Surplus Property Program, within the Logistics Division, manages surplus computer equipment and other property disposed of by State agencies. State Surplus Property Program manages surplus property by disposing of worthless property as scrap and by selling surplus property through auction by sealed bid, by authorization of local bid, or by means determined to be in the best interest of the State of Michigan. The DMB surplus warehouse* also acts as a service center for the receipt and transfer of salvage property from one agency to another agency.

See glossary at end of report for definition.

**Audit Objectives, Scope, and Methodology
and Agency Responses**

Audit Objectives

Our performance audit* of Computer Equipment Surplus and Salvage, Department of Information Technology (DIT) and Department of Management and Budget (DMB), had the following objectives:

1. To assess the effectiveness* of DIT and DMB controls in preventing unauthorized disclosure of data on surplus and salvage computer equipment.

2. To assess the effectiveness of DIT and DMB controls in preventing unauthorized removal or theft of surplus and salvage computer equipment.

Audit Scope

Our audit scope was to examine the program and other records related to surplus and salvage of computer equipment. Our audit was conducted in accordance with *Government Auditing Standards* issued by the Comptroller General of the United States and, accordingly, included such tests of the records and such other auditing procedures as we considered necessary in the circumstances.

Audit Methodology

Our audit procedures, performed from January through May 2004, included examination of records related to surplus and salvage of computer equipment primarily for the period June 2003 through May 2004. To accomplish our audit objectives, our audit methodology included the following phases:

1. Preliminary Review and Evaluation Phase
    We conducted a preliminary review of the surplus and salvage computer equipment process. We identified the responsibilities and processes for surplus and salvage of computer equipment. We used the results of our review to determine the extent of our detailed analysis and testing.

* See glossary at end of report for definition.

2. <u>Detailed Analysis and Testing Phase</u>
    We performed an assessment of the processes and security of surplus and salvage computer equipment. Specifically, we assessed:

    a. Effectiveness of DIT and DMB controls in preventing unauthorized disclosure of data on surplus and salvage computer equipment:

        (1) We evaluated policies and procedures for processing surplus and salvage computer equipment.

        (2) We evaluated procedures for destruction of data on surplus and salvage computer equipment.

        (3) We selected and tested surplus and salvage computer equipment hard drives* to determine if data had been removed from the hard drives.

    b. Effectiveness of DIT and DMB controls in preventing unauthorized removal or theft of surplus and salvage computer equipment:

        (1) We evaluated procedures for tracking surplus and salvage computer equipment.

        (2) We selected surplus and salvage computer equipment disposal requests* and verified that appropriate approvals were made.

3. <u>Evaluation and Reporting Phase</u>
    We evaluated and reported on the results of the detailed analysis and testing phase.

<u>Agency Responses</u>
Our audit report contains 2 findings and 2 corresponding recommendations. The agency preliminary responses indicated that DIT agreed with the findings and has partially complied or will comply with the recommendations.

See glossary at end of report for definition.

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The agency preliminary response that follows each recommendation in our report was taken from DIT's written comments and oral discussion subsequent to our audit fieldwork. Section 18.1462 of the *Michigan Compiled Laws* and DMB Administrative Guide procedure 1280.02 require DIT to develop a formal response to our audit findings and recommendations within 60 days after release of the audit report.

COMMENTS, FINDINGS, RECOMMENDATIONS, AND AGENCY PRELIMINARY RESPONSES

EFFECTIVENESS OF CONTROLS IN PREVENTING
UNAUTHORIZED DISCLOSURE OF DATA ON
SURPLUS AND SALVAGE COMPUTER EQUIPMENT

<u>**COMMENT**</u>

Background: Significant amounts of data are stored on the State's network and desktop computer equipment hard drives. When data is erased from a hard drive, it remains on the hard drive unless effective overwriting* techniques are used or the hard drives are physically destroyed. If effective overwriting techniques are not used or the hard drives are not destroyed, data can be recovered through the use of readily available software. Consequently, it is important to have an effective data destruction process to ensure that confidential and sensitive data is not disclosed.

Audit Objective: To assess the effectiveness of the Department of Information Technology (DIT) and the Department of Management and Budget (DMB) controls in preventing unauthorized disclosure of data on surplus and salvage computer equipment.

Conclusion: DIT and DMB controls were not reasonably effective in preventing unauthorized disclosure of data on surplus and salvage computer equipment. Our assessment disclosed one material condition*. DIT had not established effective controls to ensure the removal or destruction of confidential and sensitive State data on surplus and salvage computer equipment (Finding 1).

<u>**FINDING**</u>

1.   <u>**Surplus and Salvage Computer Equipment**</u>

DIT had not established effective controls to ensure the removal or destruction of confidential and sensitive State data on surplus and salvage computer equipment. Without effective controls to remove or destroy data, it is possible that confidential and sensitive data could be retrieved by unauthorized agency personnel or by individuals that purchase computers at State surplus auctions.

Destroying hard drives or overwriting data on hard drives help protect against unauthorized disclosure of confidential and sensitive data. Hard drive destruction

See glossary at end of report for definition.

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is the process of physically damaging a hard drive so that it is not usable in a computer and data cannot be retrieved. Overwriting is the process of replacing information with meaningless data so that the information cannot be recovered from the hard drive.

Our review disclosed:

a. DIT did not effectively communicate procedures and provide guidance and training to its staff for the destruction of confidential and sensitive data on surplus and salvage computer equipment.

b. DIT did not ensure that its process for overwriting data on hard drives sufficiently destroyed the data before the hard drive was reused by another executive branch department or sold at auction. DIT had implemented an overwriting process; however, it did not test the process to ensure that the data was not recoverable. We tested four desktop hard drives that DIT had overwritten. We recovered confidential and sensitive data on all four of the desktop hard drives tested. We also recovered data that could be used to compromise the State's network security from computer equipment ready to be auctioned.

After we brought the test results to management's attention, DIT worked with a vendor to evaluate and implement data overwriting software for use with desktop computer equipment using a process approved by the U.S. Department of Defense.

c. DIT did not ensure the timely destruction of surplus desktop hard drives because DIT had not provided its staff with a method for destroying surplus desktop hard drives. As of March 2004, approximately 2,100 surplus desktop hard drives were at the DIT salvage warehouse, awaiting destruction. Our audit procedures recovered confidential and sensitive data on 10 of 19 hard drives that we tested. After we brought this to management's attention, DIT tested a method for destroying surplus desktop hard drives; however, DIT did not implement the method.

d. DIT had not developed guidance for executive branch departments on acceptable methods of data destruction of hard drives containing confidential

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data. The guidance would help to determine when re-use of hard drives containing confidential and sensitive data is acceptable.

e. DIT had not developed an agreement with DMB for secure disposal of surplus network computer equipment. In addition, DIT did not communicate to DMB the effective date of surplus and salvage procedures for desktop computers. DMB continued to receive and accept disposal requests from executive branch departments during a period of time in which DIT and DMB were unclear of the effective date and their responsibilities for surplus and salvage procedures. As a result, DMB processed some disposal requests without DIT approval. DIT approval would help to ensure that data on desktop hard drives is destroyed.

RECOMMENDATION

We recommend that DIT establish effective controls to ensure the removal or destruction of confidential and sensitive State data on surplus and salvage computer equipment.

AGENCY PRELIMINARY RESPONSE

DIT agreed with the finding for the time period covered by the audit and will continue its efforts to establish effective controls to ensure the removal or destruction of confidential and sensitive State data on surplus and salvage computer equipment. During the audit, DIT tested, purchased, and implemented software, which was approved by the U.S. Department of Defense and the DIT Office of Enterprise Security, to clean and sanitize hard drives. DIT informed us that senior DIT management held awareness training across the State to ensure that DIT employees are aware of and follow the latest salvage procedures.

EFFECTIVENESS OF CONTROLS IN PREVENTING UNAUTHORIZED REMOVAL OR THEFT OF SURPLUS AND SALVAGE COMPUTER EQUIPMENT

COMMENT

Background: The sale or theft of surplus and salvage computer equipment hard drives that contain confidential and sensitive data puts the State at risk of unauthorized

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disclosure of confidential and sensitive data. Controls to prevent unauthorized disclosure of confidential and sensitive data should include policies and procedures to track surplus and salvage computer equipment from the original disposal request to the final disposition to reuse, sell, or dispose. Without effective controls to track computers through the surplus and salvage process, unauthorized removal or theft of surplus and salvage computer equipment may occur.

Audit Objective: To assess the effectiveness of DIT and DMB controls in preventing unauthorized removal or theft of surplus and salvage computer equipment.

Conclusion: DIT and DMB controls were somewhat effective in preventing unauthorized removal or theft of surplus and salvage computer equipment. We identified a reportable condition* related to surplus and salvage computer equipment tracking (Finding 2).

FINDING

2.   Surplus and Salvage Computer Equipment Tracking
DIT did not implement comprehensive tracking controls over surplus and salvage computer equipment and hard drives to monitor the movement and location of surplus and salvage computers. As a result, DIT cannot completely account for and control surplus and salvage computer equipment and hard drives.

When disposing of unneeded computer equipment, State departments prepare a disposal request and a list of equipment. DIT processes the disposal of unneeded computer equipment. Tracking disposed of surplus and salvage computer equipment includes documenting received surplus and salvage computer equipment and reconciling it to the corresponding disposal request and list of equipment. Tracking disposed of equipment would help DIT to ensure that computer equipment is not lost or stolen during the surplus and salvage process. Our review disclosed:

a.   DIT did not always document its tracking of surplus and salvage desktop computer disposal requests. We examined 12 desktop computer disposal requests to determine if DIT had received and tracked surplus and salvage desktop computers and hard drives. DIT did not have complete tracking

* See glossary at end of report for definition.

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documentation for 11 of the 12 disposal requests. Effective tracking controls would help ensure that DIT received all disposed of surplus and salvage desktop computers and hard drives.

b. DIT did not implement a complete tracking process for surplus and salvage network computer equipment. DIT did not track surplus network computer equipment hard drives. Also, for approximately eight months, DIT did not update tracking documentation for surplus network computer equipment. Without a complete tracking process, DIT cannot ensure that network computer equipment and hard drives are not lost or stolen during the surplus and salvage process.

RECOMMENDATION

We recommend that DIT implement comprehensive tracking controls over surplus and salvage computer equipment and hard drives to monitor the movement and location of surplus and salvage computers.

AGENCY PRELIMINARY RESPONSE

DIT agreed with the finding for the time period covered by the audit and will continue its efforts to implement comprehensive tracking controls over surplus and salvage computer equipment and hard drives to monitor the movement and location of surplus and salvage computers. DIT informed us that it reported in the 2002 Biennial Internal Control Evaluation that DIT management recognized the critical need to develop and implement a comprehensive asset management system in order to more effectively control information technology equipment, manage information technology equipment life cycle, and leverage State of Michigan information technology assets. Full implementation of a comprehensive asset management system is planned for January 2006.

GLOSSARY

Glossary of Acronyms and Terms

computer equipment	Network and desktop equipment.
desktop computer equipment	Equipment including workstation components and laptaps.
disposal request	A document prepared to request and obtain approval for disposing of surplus and salvage property.
DIT	Department of Information Technology.
DIT salvage warehouse	DIT facility used to store usable computer equipment.
DMB	Department of Management and Budget.
DMB surplus warehouse	DMB facility used to store excess State property.
effectiveness	Program success in achieving mission and goals.
hard drive	A magnetic disk within a computer used to store data.
material condition	A reportable condition that could impair the ability of management to operate a program in an effective and efficient manner and/or could adversely affect the judgment of an interested person concerning the effectiveness and efficiency of the program.
network computer equipment	Equipment including servers, routers, hubs, and switches.
overwriting	The process of replacing information with meaningless data so that the information cannot be recovered from the hard drive.

performance audit	An economy and efficiency audit or a program audit that is designed to provide an independent assessment of the performance of a governmental entity, program, activity, or function to improve public accountability and to facilitate decision making by parties responsible for overseeing or initiating corrective action.
reportable condition	A matter that, in the auditor's judgment, represents either an opportunity for improvement or a significant deficiency in management's ability to operate a program in an effective and efficient manner.
salvage	Discarded or damaged property, including computer equipment, that is repaired if necessary and reused by the State of Michigan.
surplus	Property, including computer equipment, determined to be no longer needed for use by the State of Michigan.